

To these Experiments may be added the tenth Experiment of the first Book, where the Sun's Light in a dark Room being trajected through the parallel superficies of two Prisms tied together in the form of a Parallelopide, became totally of one uniform yellow or red Colour, at its emerging out of the Prisms. Here, in the production of these Colours, the confine of shadow can have nothing to do. For the Light changes from white to yellow, orange and red successively, without any alteration of the confine of shadow: And at both edges of the emerging Light where the contrary confines of shadow ought to produce different effects, the Colour is one and the same, whether it be white, yellow, orange or red: And in the middle of the emerging Light, where there is no confine of shadow at all, the Colour is the very same as at the edges, the whole Light at its very first emergence being of one uniform Colour, whether white, yellow, orange or red, and going on thence perpetually without any change of Colour, such as the confine of shadow is vulgarly supposed to work in refracted Light after its emergence. Neither can these Colours arise from any new modifications of the Light by refractions, because they change successively from white to yellow, orange and red, while the refractions remain the same, and also because the refractions are made contrary ways by parallel superficies which destroy one another's effects. They arise not therefore from any modifications of Light made by refractions and shadows, but have some other cause. What that cause is we shewed above in this tenth Experiment, and need not here repeat it.

There

There is yet another material circumstance of this Experiment. For this emerging Light being by a third Prism *HIK* refracted towards the Paper *PT*, and there *Fig. 22. Part 1.* painting the usual Colours of the Prism, red, yellow, green, blue, violet: If these Colours arose from the refractions of that Prism modifying the Light, they would not be in the Light before its incidence on that Prism. And yet in that Experiment we found that when by turning the two first Prisms about their common Axis all the Colours were made to vanish but the red; the Light which makes that red being left alone, appeared of the very same red Colour before its incidence on the third Prism. And in general we find by other Experiments that when the rays which differ in refrangibility are separated from one another, and any one sort of them is considered apart, the Colour of the Light which they compose cannot be changed by any refraction or reflexion whatever, as it ought to be were Colours nothing else than modifications of Light caused by refractions, and reflexions, and shadows. This unchangeableness of Colour I am now to describe in the following Proposition.

#### PROP. II. THEOR. II.

*All homogeneous Light has its proper Colour answering to its degree of refrangibility, and that Colour cannot be changed by reflexions and refractions.*

In the Experiments of the 4th Proposition of the first Book, when I had separated the heterogeneous rays from one another, the Spectrum *pt* formed by the separated